

REMARKS

Claim 1, 8 and 9 have been amended to change " $\text{Si} \leq 0.15\%$ " to " $\text{Si} < 0.15\%$ " based on, e.g., the disclosure at page 8, lines 13-16 in the specification to more clearly distinguish over the cited art. Claim 4 has been amended in view of amended claim 1. Claims 12-15 have been added based on specific examples in Table 1 on page 16 in the specification.

Entry of the above amendment is respectfully requested.

Obviousness Rejections

On page 2 of the Office Action of August 22, 2007, claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al (JP 8-165542, hereinafter JP '542) in view of Jean et al (US 5,714,116, hereinafter US '116) and Jiro et al (US 5,639,421, hereinafter US '421). Also, on page 5 of the Office Action, claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '542 in view of US '116 and US '421 and in further view of Lars-Ake et al (US 6,048,491, hereinafter US '491).

Applicant respectfully submits that the invention as recited in the amended claims is not obvious over the cited art combinations, and requests that the Examiner reconsider and withdraw these rejections in view of the following remarks.

Initially, Applicant notes that the claims have been amended to recite a composition containing less than 0.15% Si, and claims 12-15 have been added reciting $\text{Si} \leq 0.13\%$, $\text{Si} \leq 0.12\%$, $\text{Si} \leq 0.1\%$, and $\text{Si} \leq 0.05\%$, respectively.

With respect to the Examiner's citation of Steel H in US '421, Applicant submits that one skilled in the art would have considered the 0.14% Si content therein to be erroneous, since that steel is supposed to be according to the invention of US '421 (col. 6, lines 59-61) and since the invention of US '421 is clearly directed to a composition containing 0.15-1.00% Si (see, e.g., the Summary of the Invention at col. 1, lines 53-65).

Further, Applicant submits that US '421 teaches away from the present invention, because the disclosure at col. 4, lines 22-28 indicates that 0.15-1.00% Si is used to control hardness at the solution treated state together with Mn so as not to damage the ductility and toughness after aging treatment, and thus one skilled in the art would have thought that if less than 0.15% Si were used, hardness at the solution state would not be controlled and ductility and toughness after aging treatment would be damaged.

In addition, Applicant submits herewith an executed Rule 132 Declaration setting forth that the steel according to the invention is not able to be hardened by structural hardening.

Specifically, as indicated in the Declaration, the steel described in US '421 is a precipitation hardening steel (see the Abstract and column 1, lines 47-52) containing less than 0.18% of C, 0.5 to 1.5% of Al, 0.7 to 1.7% of Cu, these elements being necessary to obtain precipitation hardening (see column 4, lines 55-67), and 0.15 to 1% of Si necessary to control the hardness at the solution treated state together with Mn in a range of 0.15 to 1.00% so as not to damage the ductility and the toughness after aging (see column 4, lines 22-29).

In contrast, the steel according to the claimed invention is not a precipitation hardening steel, because it does not contain enough aluminum or enough copper.

That is, the steel according to the present invention is not able to be hardened by structural hardening.

Thus, Applicant wishes to emphasize that there is no overlap of the chemical compositions of the steels of the present invention and of the prior art (all the limitations have to be considered as a whole), and the technical effect of Si < 0.15 % in the present invention (thermal conductivity) is neither disclosed nor suggested by the prior art. Therefore, one skilled in the art has no reason to expect that the steels have the same properties.

Therefore, Applicant submits that the amended claims reciting a composition containing less than 0.15% Si patentably distinguish over the cited art combinations including US '421 when properly considered, and that claims 12-15 reciting $\text{Si} \leq 0.13\%$, $\text{Si} \leq 0.12\%$, $\text{Si} \leq 0.1\%$, and $\text{Si} \leq 0.05\%$, respectively, further patentably distinguish over the cited art combinations including US '421 even if the 0.14% Si content in Steel H of US '421 were not erroneous. Accordingly, withdrawal of the rejection over JP '542 in view of US '116 and US '421 and the rejection over JP '542 in view of US '116 and US '421 and in further view of US '491 is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
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